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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LOPEZ, CARLOS N

ART UNIT PAPER NUMBER

1731

DATE MAILED: 09/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

230  
10/23,175

Applicant(s)

MAILE ET AL.

Examiner

Carlos Lopez

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/11/04</u> . | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Drawings*

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recited of modifying a thermal stress such that the thermal stress is a tensile stress or a substantially zero in a specific temperature range. The claim does not specify the material for which its thermal stress is specified. What material has its thermal stress modified?

In claim 1, is the phrase "a thermal stress", and "tensile stress" referring to any glass or the glass that is being cooled?

In claim 2, 5, 11 and 19, is the phrase "of a glass transition region" referring to any glass or the glass that is being cooled?

In claims 3-8, the term "the cooling" lacks antecedent basis. Additionally, in claims 3-8, and 21-25, the claims refer to "the slope" of the cooling segments, is applicant referring to slope in relation to how the cooling segments are arranged to one another? Or is the term "slope" referring to the temperature vs. distance to the root, wherein the root is the location from which the glass sheet is being drawn?

In claims 8,9,11, and 18, recite "cooling the glass sheet non-linearly", is non-linearly referring to the temperature of the glass?

In claim 18, the phrase "a root" is it referring to the root from which the glass is being drawn or is it to any root?

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 3-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Kitayama et al (US 5,916,656). Kitayama discloses method of fabricating a glass sheet (See abstract). The method comprises, as shown in figure 4, the glass sheet is cooled in at least 2 segments wherein in each segment, namely at the 30<sup>th</sup> and 5 hour duration, the cooling rate, slope varies. As noted in col. 23, line 1ff, the cooling treatment

eliminates damage due to thermal distortion, hence the cooling treatment modifies thermal stress in the glass sheet to substantially zero.

As for claim 3 as best shown in figure 4, the 30<sup>th</sup> and 5 hour duration have different slopes.

As for claim 4, the claimed third slope is deemed as the cooling rate when the glass sheet arrives to room temperature for which the glass sheet remains at room temperature proving a slope of zero, no change in the temperature of the glass sheet.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda (JP 10-053426) in view of Kitayama et al (US 5,916,656). Maeda discloses a method of making glass for optical recording mediums (See Machine translation paragraph 1). The method comprises drawing glass (as shown in figure 1) and cooling the glass by passing the glass into a segmented cooling device comprising 12 compartments (see machine translation paragraph 30 and figure 3). Maeda is silent disclosing modifying a thermal stress of the glass sheet such that the thermal stress is a tensile stress or substantially zero. However, Maeda notes that the glass manufactured

by its method provides for glass having a small curvature, which is deemed as being substantially free from warping (See Machine translation paragraph 34). The small curvature noted by Maeda is due thermal stress caused by the varying temperature within the glass, thus in providing a glass having a small curvature, Maeda is in fact modifying, minimizing, the thermal stress of the glass. As further taught by Kitayama, glass used for optical recording mediums, as done by Maeda, is preferred to have no thermal distortion (Col. 23, lines 1ff), no thermal stress.

Thus, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have provided a glass sheet of Maeda having no warping as alluded by Maeda itself and further taught by Kitayama in order to provide a glass for optical recording medium.

As for claim 2-4, 12-13, 16, 19-20, and 22-23 the molten glass sheet, hence at a temperature in its glass transition range, passing through 12 compartments each having a temperature difference of at least 10 degrees celcius (See Machine translation paragraph 30) provides for the claimed cooling segments having different slopes and as noted in machine translation paragraph 31, the temperature of the cooling is done over the glass transition temperature of the glass, 500°C.

As for claims 6-7, 17, and 24 the temperature of each segments is lowered by a difference ranging from 10°C to 40°C, thus the slope of a segment is higher the preceding segment.

As for claim 8-9, 14, 21, and 25 the glass entering a segment having a lower temperature would cause the segment to increase its temperature for which it would

result in a non-linear cooling as evidenced by Newton's cooling equation, see non-patent literature cited in PTO-892.

As for claim 10, the glass being drawn downward towards gravity is under tension.

As for claim 11, a repetition of the processes disclosed by Maeda, would have been done to arrive at the claimed cooling sequence that would provide a glass with no warping.

As for claim 18, the root is deemed as shaping form 2 of Maeda.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited references not applied in the above art rejections have been cited to show the state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Lopez whose telephone number is 571.272.1193. The examiner can normally be reached on Mon.-Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571.272.1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, consisting of a stylized 'L' followed by a 'Z'.

CL